intronics®
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U3 SERIES DC/DC MODULES

Applications

- Servers, Switches and Data Storage
- Wireless Communications
- Distributed Power Architecture
- Semiconductor Test Equipment
- Networking Gear
- Data Communications
- Telecommunications
- Industrial / Medical

The U3 Family of high efficiency DC/DC converters offer power levels of up to 3 Watt, which exceeds that of other sub-bricks with the same package, while also providing Ultra-Wide Input Voltage Range. With a 4:1 input voltage range and single & multi-outputs, these converters provide versatility without sacrificing the board space. All models feature an input filter, continuous short circuit protection and regulated outputs. The fully enclosed, encapsulated construction facilitates maximum power delivered with the highest efficiency of up to 80%. All converters combine creative design practices with highly derated power devices to achieve very high reliability, high performance and low cost solution to systems designers.

Specifications & Features Summary

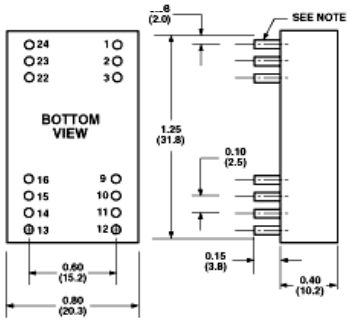
- Regulated Outputs
- -25°C to +71°C ambient operation
- Continuous Short-circuit protection
- up to 3KV, 10MΩ input-to-output isolation
- Pi Input Filter
- 4:1 Input Range
- THROUGH-HOLE PACKAGES ONLY
- 5-sided metal shield High Isolation versions
- 200KHz Switching Frequency
- No airflow or heatsink required
- Voltage Accuracy ± 2%

c UL us
Approval Pending

Model Num	V_{In}	V_{Out}	I_{Out}	$I_{No\ Load}$	$I_{Full\ Load}$	Eff	Case
U3-12S5	9-36 VDC	5.0 VDC	600.0 mA	15.0 mA	174 mA	72%	T
U3-12S12	9-36 VDC	12.0 VDC	250.0 mA	15.0 mA	165 mA	76%	T
U3-12S15	9-36 VDC	15.0 VDC	200.0 mA	15.0 mA	165 mA	76%	T
U3-12D5	9-36 VDC	±5.0 VDC	±300.0 mA	25.0 mA	179 mA	70%	T
U3-12D12	9-36 VDC	±12.0 VDC	±125.0 mA	25.0 mA	174 mA	72%	T
U3-12D15	9-36 VDC	±15.0 VDC	±100.0 mA	25.0 mA	174 mA	72%	T
U3-12S3.3	9-36 VDC	3.3 VDC	600.0 mA	15.0 mA	117 mA	70%	T
U3-48S5	18-72 VDC	5.0 VDC	600.0 mA	7.5 mA	87 mA	72%	T
U3-48S12	18-72 VDC	12.0 VDC	250.0 mA	7.5 mA	78 mA	80%	T
U3-48S15	18-72 VDC	15.0 VDC	200.0 mA	7.5 mA	78 mA	80%	T
U3-48D5	18-72 VDC	±5.0 VDC	±300.0 mA	12.0 mA	88 mA	71%	T
U3-48D12	18-72 VDC	±12.0 VDC	±125.0 mA	12.0 mA	87 mA	72%	T
U3-48D15	18-72 VDC	±15.0 VDC	±100.0 mA	12.0 mA	87 mA	72%	T
U3-48S3.3	18-72 VDC	3.3 VDC	600.0 mA	7.5 mA	58 mA	70%	T

Mechanical Outline and Pinouts for U3 Family DC/DC Converters

NOTE: Pin Size is 0.02" Inch (0.5m/m) DIA or .020 x .014 Inch
All Dimensions In Inches (mm)



PIN CONNECTION

Pin	500 VDC Single Output	500 VDC Dua Output	Pin	(1.5K & 3K) VDC Single Output	(1.5K & 3K) VDC Dual Output
1	+V Input	+V Input	1	NP	NP
2	NC	-V Output	2	-V Input	-V Input
3	NC	Common	3	-V Input	-V Input
9	NP	NP	9	NC	Common
10	-V Output	Common	10	NC	NC
11	+V Output	+V Output	11	NC	-V Output
12	-V Input	-V Input	12	NP	NP
13	-V Input	-V Input	13	NP	NP
14	+V Output	+V Output	14	+V Output	+V Output
15	-V Output	Common	15	NC	NC
16	NP	NP	16	-V Output	Common
22	NC	Common	22	+V Input	+V Input
23	NC	-V Output	23	+V Input	+V Input
24	+V Input	+V Input	24	NP	NP

*NP-NO PIN
*NC-NO CONNECTION WITH PIN
*TP-TEST POINT
*GO-GROUND

SPECIFICATIONS	
Input Specifications	
Input Voltage Range	24V--------9-36V
	48V--------18-72V
Input Filter	Pi Type
Output Specifications	
Voltage Accuracy	±2.0% max.
Voltage Balance(Dual)	±1.0% / max.
Temperature Coefficient	±0.05% / °C
Ripple and Noise, 20MHz BW, Single & ±5Vo	100mV p-p max.
Dual	1% p-p max.
Short Circuit Protection	Continuous
Line Regulation, Single/Dual[1]	±0.5%
Load Regulation, Single[2]	±0.5%
Dual[3]	±1.0%
Efficiency	See Table
Isolation Resistance	10^9 ohms
Switching Frequency	100KHz, min
Operating Temperature Range	-25°C to +71°C
Case Temperature (Plastic case)	95°C max.
(Copper case)	100°C max.
Cooling	Free-Air Convection
Storage Temperature Range	-40°C to +100°C
Dimensions	1.25X0.8X0.4 Inches
	(31.8X20.3X10.2mm)
Isolation Voltage 500VDC (Standard Models)	
1,500VDC min (Add suffix "HM")	Suffix "HM" Models
3K VDC min[4] (Add Suffix "H")	Suffix "M" Models
Case Material	
Standard Models	Non-Conductive Black Plastic
Suffix "HM" Models	Black Coated Copper with Non-Conductive Base
Notes	
1.	Measured From High Line to Low Line
2.	Measured From Full Load to 10% Load
3.	Measured From Full Load to 1/4 Load
4.	Non-Conductive Black Plastic Only

Typical at Ta= +25 ºC under nominal input voltages of 24V and 48VDC, unless noted. The information and specifications contained in this brief are believed to be accurate and reliable at the time of publication. Specifications are subject to change without notice. Refer to product specification sheet for performance characteristics and application guidelines.

Consult factory for hundreds of other available input/output voltage configurations.